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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/665,840 | 09/19/2003 | Lorna Anne Overall | CQ10105 | 6046 |
| 23493 | 7590 | 12/14/2004 | EXAMINER | |
| SUGHRUE MION, PLLC 401 Castro Street, Ste 220 Mountain View, CA 94041-2007 | | | NGUYEN, TU T | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2877 | |
| DATE MAILED: 12/14/2004 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/665,840

Applicant(s)

EVERALL ET AL.

Examiner

Tu T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/22/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in European Patent Office on 12/16/2002. It is noted, however, that applicant has not filed a certified copy of the (EPO) 02258640.8 application as required by 35 U.S.C. 119(b).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooper et al (6,571,027).

With respect to claims 1,15, Cooper discloses a system comprising: an optical source 12 (fig 1) operable to generate optical pulses, to be coupled into one end of an optical waveguide 14 (fig 1), the waveguide being optically coupled at its other end to one or more Bragg gratings 30A to 30N (fig 1); optical amplifying and gating (column 3, lines 55-67 and column 4, lines 1-20) means to be optically coupled to the waveguide and being operable to selectively transmit an optical pulse returned from a reflective optical element under interrogation, and being further operable to optically amplify an optical signal transmitted there through; and optical detection means 40 (fig 1) optically

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coupled to the optical amplifying and gating means, and being operable to detect a returned optical pulse transmitted by the optical amplifying and gating means.

Cooper does not explicitly disclose the claimed reflective optical elements. However, it would have been obvious Cooper's Bragg gratings perform the same function as the claimed reflective optical elements.

With respect to claim 2, Cooper discloses a switchable amplifier (column 10, lines 56-67).

With respect to claim 3, Cooper does not disclose a semiconductor optical amplifier and a gain claimed semiconductor optical amplifier as claimed. However, the claimed amplifiers would have been known in the art. It would have been obvious to modify Cooper with the known claimed amplifiers for different measuring purposes.

With respect to claim 4, Cooper discloses a driving means (column 10, lines 56-67) for controlling the amplifier.

With respect to claims 5-6, it would have been obvious to modify Cooper's optical source by coupling with the amplifier to improve the output signal.

With respect to claim 7, Cooper discloses a source 12 (fig 1) for generating pulses 13 (fig 1).

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With respect to claim 8, the claimed photo detector would have been known. It would have been obvious to modify Cooper with different types of detector for different purposes.

With respect to claim 9, Cooper discloses the claimed wavelength detector 40 (fig 1).

With respect to claims 10-13, it would have been obvious to modify Cooper with a section of optical waveguide or an optical signal routing means as claimed to make the system more efficiency. Since the general conditions of the invention were disclosed by the prior art, modifying the prior art with the claimed section of optical waveguide or optical signal routing means to enhance the system performance involve only routine skill in the art.

With respect to claims 14,17, Cooper discloses the spectral profile in reflection of each optical reflector covers a different spectral range (column 8, lines 45-55).

With respect 16, Cooper discloses a space array of optical gratings 30A – 30N (fig 1).

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With respect to claims 18, 20, it would have been obvious to modify with groups of array as claimed to use the system in different environments.

With respect to claim 19, the claimed Fabry-Perot etalon or mirror would have been known. It would have been obvious to modify Cooper with the known reflector elements as claimed for different measuring purposes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tu T. Nguyen whose telephone number is (571) 272-2424. The examiner can normally be reached on T-F 7:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Toatley Jr. can be reached on (571) 272-2800 Ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tu T. Nguyen
Primary Examiner
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12/09/2004